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THE ARCHAEOLOGY OF ANCIENT STATE ECONOMIES

Michael E. Smith
Department of Anthropology, University at Albany, State University of New York, Albany, New York 12222; email: mesmith@albany.edu

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■ **Abstract** This review addresses methods and theories for the archaeological study of ancient state economies, from the earliest states through the Classical period and beyond. Research on this topic within anthropological archaeology has been held back by reliance on simple concepts and an impoverished notion of the extent of variation in ancient state economies. First I review a long-standing debate between scholars who see similarities with modern capitalist economies (modernists and formalists) and those who see ancient economies as radically different from their modern counterparts (primitivists and substantivists). I suggest that the concept of the level of commercialization provides an avenue for transcending this debate and moving research in more productive directions. Next I review work on the traditional archaeological topics of production and exchange. A discussion of the scale of the economy (households, temple and palace institutions, state finance, cities and regional systems, and international economies) reveals considerable variation between and within ancient states. I review key topics in current archaeological political economy, including commercial exchange, money, property, labor, and the nature of economic change, and close with suggestions for future research.

INTRODUCTION

The comparative study of ancient state economies is a topic that has slipped between the disciplinary cracks. Although numerous scholars have researched individual aspects of this subject, few comprehensive syntheses or comparative analyses exist. Economists and economic historians from Karl Marx to Douglass North have applied powerful models to precapitalist economies, but they rarely consider archaeological data; for most economists, Rome (or perhaps Greece) is as "ancient" as they are willing to study. Economic anthropologists ignore ancient states. Historians working in the Near East and the Classical world have rich and detailed economic data, but most of their work remains highly particularistic. Anthropological archaeologists have much relevant data and a comparative anthropological perspective, but interest in the economy has waned since the 1980s;

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the reader should note the avoidance of economic topics in recent comparative collections on early states (Feinman & Marcus 1998, Manzanilla 1997). Consequently, most anthropological archaeologists today have an impoverished view of economic variation in ancient states.

The time is ripe for a new synthesis of ancient state economies. This chapter asks what archaeology can contribute to such a synthesis. My category of ancient states includes complex societies prior to the industrial revolution. I focus primarily on the early states studied by anthropological archaeologists (Trigger 2003), and on the Bronze Age, Greek and Roman states studied by Classical archaeologists and Old World prehistorians; nevertheless, the roster of relevant states extends to the Medieval period and other late preindustrial states throughout the world.[1] I adopt the "substantive definition" of the economy as the provisioning of society (entailing production, exchange, and consumption) rather than the "formal definition" of the economy as the allocation of scarce resources among alternative ends (Polanyi 1957). Although not without its ambiguities and difficulties (Wilk 1996, pp. 28–34), the substantive definition has greater applicability in cross-cultural analyses.

Greene's (1986) book, *The Archaeology of the Roman Economy*, the best archaeological study of an ancient state economy yet published, is a good starting point. Greene situates his work within the long-standing debate between the primitivist and the modernist views of the Roman economy (see below). He begins with historian Keith Hopkins' (1983) model of economic growth during the Late Republic and Early Empire periods. Hopkins expressed his model in terms of seven propositions, and Greene (1986) shows that "archaeology has a major part to play in the analysis of at least five out of Hopkins' seven clauses" (pp. 14–15) (increases in agricultural production; population growth; expansion of craft production; increased regional exchange; and a series of changes resulting from taxation in money, including intensified long-distance commerce, expansion of coinage, and urbanization). To these traditional archaeological strengths in production and exchange, anthropological archaeology adds another dimension: the analysis of domestic contexts as loci of consumption. Archaeology also expands the roster of ancient state economies far beyond those documented in the historical record.

CONCEPTUAL FRAMEWORKS

"Same or Other?" Polanyi, Finley, and the Ancient Economy

Some of the longest-running debates about ancient economies involve polarizing tendencies "to see the past as Same (a primitive version of our present, which

[1]Given the wide scope of this article, I cannot cite all of the relevant literature. I make an effort to cite syntheses, review articles, and important collections of papers in which the reader can find citations to the literature. I have prepared supplemental bibliographies organized by topic. Follow the Supplemental Material link from the Annual Reviews home page at http://www.annualreviews.org.

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teleologically evolves into it) or as Other (as a remote, alien, fundamentally *different* world)" (Moreland 2000, p. 2, emphasis in original). Although it is easy to criticize these debates today as simplistic and outdated, they retain importance for two reasons. First, much archaeological and historical scholarship on early state economies was (and still is) executed within the terms of these debates. Second, they bring into focus a number of important issues in the conceptualization and study of ancient economies today. The most prominent debate of this type focuses on the economies of Classical Greece and Rome.

Early "modernists" argued that the Greek and Roman economies did not differ greatly from the modern economy, whereas the "primitivists" emphasized the small-scale, agrarian orientation, and stagnant nature of the ancient economy compared to modern capitalism (Morris 1999). Finley's (1999) eloquent primitivist views dominated scholarship for several decades. In the late 1980s, however, historians and archaeologists began documenting higher levels of economic activity in ancient Greece and Rome than Finley posited (Greene 1986, Harris 1993, Mattingly & Salmon 2001). The same debate between modernists and primitivists exists in research on the Bronze Age Mediterranean (Sherratt & Sherratt 1991) and early medieval economies (Moreland 2000), and it is a major theme in current research by world systems scholars, who divide themselves into "continuationists" and "transformationists" over the relationship of ancient and modern world systems (Denemark et al. 2000). In these cases, to transcend the dichotomy to achieve a more adequate understanding of ancient economies is problematic for scholars.

The modernist/primitivist debate shares the "Same/Other" dichotomy with the formalist/substantivist debate in economic anthropology. The formalists argued that ancient and non-Western economies differ from capitalist economies only in degree, not in kind, whereas the substantivists argued that noncapitalist economies are fundamentally different from modern capitalism (Wilk 1996). The leading substantivist was Karl Polanyi, many of whose concepts—e.g., the notion that the economy is embedded in society—have been extremely fruitful. One of his central tenets, however—the view that capitalism is fundamentally different from other economic systems—proved quite harmful to the study of ancient state economies.

Anthropological archaeologists were strongly influenced by the major substantivist tracts of Polanyi et al. (1957) and Sahlins (1972), both of whom argue against the application of capitalist notions to noncapitalist societies. According to Polanyi (1957), noncapitalist economies are organized around the exchange mechanisms of reciprocity and redistribution, whereas capitalism is based on market exchange. The problem with this classification—which has been enormously influential in archaeology—is that it leaves no room for noncapitalist commercial exchange. To Polanyi, early state economies were not capitalist, so therefore they must have been based on reciprocity and redistribution. Polanyi did not understand the operation of ancient commercial economies.

When confronted with evidence of ancient commercial activity (in the Near East, Greece, and Rome), Polanyi devised interpretations that ruled out precapitalist commercialism by distorting historical evidence. He claimed that there were no

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true markets or "prices" (exchange values that rose and fell in response to changes in supply and demand) in the ancient world, but rather "equivalencies" that were set by the king and did not change except by royal decree (1957). These ideas have now been thoroughly refuted (Snell 1997) and Polanyi's views labeled as "dogmatic misconceptions" (Trigger 2003, p. 59); only a few scholars still accept Polanyi's ideas about ancient Old World economies (e.g., Renger 1995). Nevertheless, two generations of anthropological archaeologists were raised on the writings of Polanyi, and his work continues to cast a long shadow over archaeological research on ancient state economies.

Anthropological Archaeology: Adaptationist, Commercial, and Political Approaches

Although ancient state economies played a central role in Polanyi's research, they lost importance in economic anthropology as scholars moved beyond the formalist/substantivist debate. Most textbooks in economic anthropology are written by ethnologists who ignore archaeology and early states (e.g., Wilk 1996). Archaeologists therefore have assumed the task of theorizing ancient state economies largely independently of mainstream economic anthropology. In an influential paper, Brumfiel & Earle (1987b) identified three theoretical approaches to the issue of elite control of craft production: the adaptationist, commercial, and political approaches. Their discussion, however, serves as a useful summary of archaeological thinking on ancient state economies more generally.

The adaptationist approach focuses on the adaptation of human groups to their environment (e.g., Redman 1978). These scholars undertook regional settlement pattern surveys in many areas, and their reconstructions of regional demography and agricultural practices remain fundamental contributions to the economic study of ancient states (Sanders et al. 1979). By focusing on local adaptations, however, adaptationist scholars minimized the importance of long-distance exchanges and interactions (Feinman & Nicholas 1991). Their functionalist notion that political elites assumed control to manage the economy more efficiently for everyone's benefit conflicted with more sophisticated social theories. In their effort to discredit the adaptationist approach theoretically, however, some scholars may have thrown out the baby with the bathwater. Adaptationist theories that the rise of states was caused by population pressure (Cohen 1977) were easy to debunk (Cowgill 1975), but many archaeologists then turned away from demography as an important economic variable, thereby ignoring the essential role of population pressure in generating agricultural change (Netting 1993).

In Brumfiel & Earle's (1987b) description of the commercial development model, "increases in specialization and exchange are seen as an integral part of the spontaneous process of economic growth" (p. 1). They provide two unconvincing reasons for dismissing this approach. First, they claim that few cases existed in which social complexity originated through commercial development. Although such cases may be rare among the earliest states (Trigger 2003), in many more

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recent cases (e.g., the Swahili and Silk Road economies), commercialization did indeed generate social complexity. Their second objection to the commercial model is the odd notion that the model requires that "sizable profits accumulate in private hands" and that this "rarely happened" (p. 2). Instead of viewing commercial development as a general theoretical approach, however, it is more useful to conceptualize this process as an empirical phenomenon. Just as to talk of commercial development in a state-controlled economy like the Inka or Egyptians would be misleading, to reject commercial development as an active economic force in the Roman or Greek economies also would be absurd. The level of commercialization is, in fact, one of the key dimensions of variation in ancient state economies, a topic explored more fully below.

Clearly Brumfiel & Earle (1987b) favor the political model. Local elites assume control of the economy, but unlike in the adaptationist approach, elites take a more self-centered stance by strategically controlling aspects of the economy for their own economic and political ends. Since 1987, the political model has developed in two directions. One approach has emphasized the role of the individual actor, elevating "agency" and "practice" to central concerns of archaeological research. Although this literature includes some valuable contributions, economics has been pushed aside by political strategizing, prestige, emulation, identity, and gender as major foci of empirical research and theorizing (Pauketat 2001, Stein 2002). This approach (well represented in the new *Journal of Social Archaeology*) typically emphasizes theory-driven speculation over empirical research, and it as yet contributes little to the study of ancient economies. The second research direction to emerge from Brumfiel & Earle's political model is archaeological political economy.

Archaeological Political Economy

"Archaeological political economy" is not yet an integrated theoretical movement. I use this term to identify those materialist approaches to ancient state economies, that are empirically grounded and share a concern with variability in the relationship between politics and economics. Archaeological political economy is described in several recent syntheses (Cobb 2000; Earle 2002b; Hirth 1996; Muller 1997, pp. 1–53; Yoffee 1995). This work is characterized by several broad themes: a global perspective on economies as open systems; attention to the economic dimensions and implications of political behavior and institutions; a concern with inequality and social classes; and a focus on processes of local historical change rather than broad processes of cultural evolution. Archaeological political economy is related to work in anthropological political economy by scholars like Wolf (1982) and Roseberry (1988). Gil Stein (2001, p. 356) recently characterized political economy research on Old World states as emphasizing four themes: (*a*) a shift from models of states as highly centralized to notions of variability and limits of state power; (*b*) a focus on the economic organization of states; (*c*) research on rural areas and center-hinterland interactions; and (*d*) attention to interregional interaction at diverse spatial scales. To these I add the importance of the household perspective for understanding early state economies (see below).

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Earle promotes an unfortunate alternative definition of the phrase "political economy." In place of the long-established definition as a theoretical approach to economics (Muller 1997, pp. 1–53; Roseberry 1988), Earle defines political economy as a sector or type of economic realm, "the political economy," which he contrasts with the domestic economy (Earle 2002a; Johnson & Earle 2000, pp. 22–27). Although Earle is a leading contributor to the study of archaeological political economy (as a theoretical and empirical approach), this usage only causes confusion, as witnessed in recent works that switch back and forth between the two definitions without explanation (Feinman & Nicholas 2004, Hirth 1996, Masson & Freidel 2002).

Earle (2002b, p. 7) suggests that the new institutional economics offers an "exceptional opportunity" to understand the economies of ancient states and chiefdoms (North 1981). This school of economics explores the relationships between individual actions and institutions, focusing on concepts of property rights and transaction costs (Acheson 1994; North 1981, 1991). Most applications of this model, including those by anthropologists (Acheson 1994), simply assume a high level of commercialization (Ankarloo 2002), and the work of adapting the new institutional economics approach to uncommercialized or partially commercialized economies barely has begun (Jones 1993). Economist Morris Silver (1995) applies North's concept of transaction costs to ancient Near Eastern economies. Silver repeatedly asserts that particular social practices and institutions lowered transaction costs (thereby contributing to commercial activity), but this statement does not clarify greatly our understanding. Although there are some promising exploratory studies by archaeologists and ancient historians (Manning & Morris 2004, Morris 2004), to date little progress is reported. Economists working in other traditions have published some highly insightful analyses (Allen 1997, Henry 2004, Temin 2001), but these remain isolated contributions.

VARIATION IN ANCIENT STATE ECONOMIES

Most anthropological archaeologists avoid the Classical world, and most Classicists ignore other early state economies, but these biases have little theoretical or comparative justification. One way that Greece and Rome stand out in relation to many early states is their high level of commercialization. These were not, however, the only early states with money, entrepreneurial merchants, and other commercial institutions. In fact, the degree of commercialization is one of the crucial axes of variation in ancient state economies; the type of political organization is another. In the following sections I review these two variables, and in the remainder of the chapter I relate them to the economic processes and institutions of early states.

The Degree of Commercialization

"Commercialization" is a synthetic concept that includes several related aspects of economic process: the extent to which a price-making market allocates

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TABLE 1 Classification of ancient state economies by commercialization and political system

	Political system			
Commercial level	**Weak states**	**City-States**	**Territorial states**	**Empires**
Uncommercialized			Egypt, Tiwanaku	Inka
Low commercialization	Angkor	Classic Maya	Shang, Great Zimbabwe	Teotihuacan
Intermediate commercialization	Indus	Sumerian, Mixtec, Aztec		Tarascan, Assyria, Vijayanagara
Advanced precapitalist commercialization		Old Assyrian, Swahili, Classical Greece		Rome

commodities and the factors of production; the prominence of entrepreneurial activity; and the pervasiveness of institutions such as money, marketplaces, credit, and banking (Neale 1971, Smith 1976a, pp. 313–15). Here I focus on internal commercialization as the role of commercial institutions within an economy. External commercialization, which describes exchange between states, is a separate domain described in other sections below. In Table 1 I classify some of the better-known ancient economies according to their levels of internal commercialization. This scheme is adapted from Carol Smith's (1976a) discussion of the level of commercialization in regional peasant economies. I employ a four-class ordinal scale of commercialization; the first three levels correspond roughly to Smith's uncommercialized, partially commercialized, and fully commercialized categories.

Uncommercialized state economies lack marketplaces, independent entrepreneurial merchants, general-purpose money, and other institutions associated with commercial exchange. Full-time craft specialists work for the state or state-connected temple institutions, and agents of the state carry out long-distance transfers and exchanges. Historical descriptions of Egyptian and Inka society, supported by archaeological data, make clear the strong state control of most sectors of these economies and the accompanying proliferation of bureaucratic institutions and practices for management of the economy.

Economies with low commercialization have limited marketplace distribution of goods and services, but land and labor are not commodities. Government control of many sectors of the economy is strong, but typically a small independent commercial sector of merchants and marketplaces does exist. These economies are often of limited spatial scale. Smith includes solar and dendritic marketing systems in this category. Economies with intermediate commercialization correspond approximately to Smith's "fully commercialized" type (1976a). These economies are characterized by interlocking central place market systems for goods and services, and they have commercial institutions such as money and professional entrepreneurial merchants. Land and labor, in contrast, are typically

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under state or elite control, with only limited occurrence of private property in land. Of the commercial economies listed in Table 1, the Aztec and Sumerian are the best-documented examples. The highest level of commercialization for premodern economies is labeled advanced precapitalist commercialization; this category is not included in Smith's account. Societies at this level of commercialization had dynamic precapitalist economies with extensive markets in goods and land, limited labor markets, and the presence of numerous commercial institutions like banking, credit, and merchant partnerships (Larsen 1976, Temin 2001). The archaeological identification of commercial exchange is discussed below.

Because commercialization is an ordinal scale, my classification is, by necessity, somewhat artificial. I present the categories to illustrate the scale, and they should not be reified. Scholars debate issues such as the roles of banking and credit or the influence of money in many of these economies, and there is much room for disagreement over the classification of individual economies in Table 1.

Types of States

Most anthropological archaeologists view the state more as an evolutionary stage than as a political institution. This view leads to a homogenizing approach that assumes a basic uniformity of ancient states. Categories like "archaic states" (Feinman & Marcus 1998) and "the early state" (Claessen & Skalnik 1978) have a long history in anthropology. This unitary approach to states has been criticized by McGuire (2002, pp. 161–67) and Trigger (2003, pp. 26–28), who argue for greater attention to variability. At the other extreme, splitters argue that particular states were utterly unique (Higham 2002, Murra 1980). I propose a four-class typology of ancient state political forms as a compromise between these extremes (Table 1). I present these types for the purpose of discussing economic patterns and institutions and their relationship to state organization; like the commercial categories presented above, these types should not be reified or taken too seriously.

The category of weak states includes types such as the segmentary state and the galactic polity. Many applications of these states to ancient polities have not succeeded under close scrutiny (Morrison 1997). The Khmer polity of Angkor, however, is a good candidate for an ancient segmentary state. I include the Indus civilization in the weak state category, acknowledging the inconclusive debate between those who view the Indus polity as a state (Kenoyer 1998, pp. 81–83) and those who claim that power was not sufficiently centralized for the Indus polity to be considered a state (Possehl 1998). Although I do not address most of the chiefdom literature in this review for reasons of space, the economies of chiefdoms can be quite difficult to distinguish—conceptually and empirically—from those of weak states (Earle 2002b, Muller 1997).

The category of city-states describes groups of small polities centered on a single urban capital that are linked to regional systems by cultural bonds and extensive interaction. Hansen (2000, 2002) proposes definitions of city-state and city-state culture and assembles 36 examples that fit his criteria. In his introductions and

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conclusions to these important volumes, Hansen effectively answers critics who reject the city-state concept outside of Greece (Marcus & Feinman 1998), as well as those who take an overly broad definition of this category (Nichols & Charlton 1997). One variation of Hansen's model occurs when a city-state conquers its neighbors to become the seat of an empire, leaving the governments and rulers of subordinate city-states in power; in Table 1, the Aztec and Classical Greece cases include episodes of city-state-based empires.

Large territorial states are one of two political forms (the other being city-states) in Trigger's (2003) masterful comparative analysis. Ancient Egypt is the best-known and best-studied example of this category. The Tiwanaku, Shang, and Great Zimbabwe polities are not documented as extensively as Ancient Egypt, but they fit this category as well. Of all ancient polity types, empires have received the most systematic and comparative attention in recent years (Alcock et al. 2001). The best-documented ancient empires are the Roman, Assyrian, Achaemenid, and Inka polities, as well as the Aztec and Athenian cases included above as city-state-based empires. Table 1 illustrates one of the relationships between commercialization and state power: Large territorial states fall at the low end of the commercialization scale, whereas city-states fall at the high end. Empires, in contrast, cover the entire range of commercialization, from the uncommercialized Inka to the heavily commercialized Roman economy.

PRODUCTION AND EXCHANGE

Demography and Agriculture

Archaeological field survey research has made its greatest contributions to economic analysis in the realms of regional demography and agricultural systems. Even for Classical Greece, with its extensive written documentation, archaeological surveys have "transformed our picture of the settled countryside" (Cartledge 1998, p. 11; Jameson et al. 1994). Similarly, the discovery of surprisingly dense rural settlement in the lowland Classical Maya tropical forest (Culbert & Rice 1990) generated a fundamental transformation in our understanding of that society and its economic organization (Masson & Freidel 2002).

The excavation and mapping of field walls, irrigation canals, terraces, raised fields, and other agricultural features have become major foci of fieldwork for many ancient states, with a large literature of their own (Denevan 2001, Jameson et al. 1994, Whitmore & Turner 2001). Archaeologists have focused most attention on evidence for intensive agricultural practices. The existence of a strong cross-cultural association between intensive agriculture and state societies is not in doubt (Trigger 2003), but the nature and implications of intensive agriculture in specific cases is the topic of considerable debate.

In some cases the functions of ancient water-control systems cannot be determined easily. For example, were the canals and reservoirs at Angkor—which obviously had a symbolic role in urban planning—used to irrigate rice fields?

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Scholars have yet to resolve this basic, low-level question (Acker 1998, Stott 1992). More commonly, however, researchers agree on the uses of ancient field systems but not on their social implications. Recent fieldwork on raised fields along the margins of Lake Titicaca in the Andes illustrates the situation. The relationship of this extensive field system with the nearby urban center of Tiwanaku (AD 100–1000) is a topic of debate. Kolata (1991) interprets the raised fields as a large-scale construction effort organized by the Tiwanaku state, whereas Erickson (2000) argues that individual households most likely constructed their own fields without the controlling arm of the state; this debate has yet to be resolved.

Butzer (1996, p. 200) notes that "the Wittfogel model, like Elvis, refuses to die," and archaeologists are still arguing about the state's role in ancient irrigation systems (Billman 2002, Lees 1994, Scarborough 2003). Rather than make grand pronouncements for and against Wittfogel or other simple models (Isaac 1993), however, archaeologists should focus on lower-level issues. The forms of field systems, for example, can provide information about state control. The impressive agricultural terraces of the Inka, with their great regularity and coordination of walls over large areas (Denevan 2001, pp. 170–201), suggest state control, whereas the smaller, irregular forms of Maya and Aztec terraces suggest organization at the household level with little state interference (Dunning & Beach 1994, Smith & Price 1994); these hypotheses are supported by archaeological and documentary accounts of the two economies.

Craft Production

Craft production in ancient states is an active area of current archaeological research. The technologies of many ancient crafts are now relatively well understood thanks to experimental, technical, and comparative studies (David & Kramer 2001), and research addresses the social organization and contexts of production practices. Unfortunately, conceptual advances have been held back by inappropriate use of the concept of specialization, a term that has outlived its usefulness in this area and should be abandoned. Specialization was a major part of Childe's influential model of cultural evolution (Wailes 1996), and no one doubts that states have more specialists than do other kinds of societies (Clark & Parry 1990). But within anthropological archaeology the term specialization came to be used as a synonym for craft production, leading to fruitless arguments about the meaning of the term (Clark 1995); archaeologists working in other traditions, however, apparently were not sidetracked this way (Greene 1986).

In an important paper, Costin (1991) clarifies the issue by identifying four independent variables or dimensions of craft production that she labels intensity, concentration, scale, and context. Although she calls these variables aspects of "specialization," in a later study she recognizes that the relevant overall category is craft production systems (Costin 2001a), not specialization. "Intensity" refers to the full-time versus part-time nature of craftwork. This is the only aspect of craft production systems that can be usefully labeled "specialization." In many ancient

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states, much production was done by crafters who practiced their trades part-time, not full-time (Trigger 2003, pp. 358–73). "Concentration" describes the location and density of facilities (e.g., rural versus urban, degree of nucleation).

Costin's "scale" describes the size and organization of production facilities. The most influential scheme is Peacock's (1982, pp. 6–11; see also van der Leeuw 1976, pp. 402–3) typology: household production (part-time domestic production for domestic use); household industry (part-time domestic production for exchange); individual workshops (full-time workers in dedicated facilities); nucleated workshops (clusters of workshops); manufactories (large-scale production requiring capital investment); estate production (attached producers working on rural estates); and institutional production (attached producers working for a state or official institution). In many states, most craft production was done within or around the house (household industry) or in workshops connected to the house (Feinman & Nicholas 2000). The loose use of the term workshop for any production location causes confusion, however (for discussion see Moholy-Nagy 1990). Costin's final dimension, "context," describes the social affiliation of producers. Most discussion of this topic focuses on the categories of "independent artisans," who work on their own and distribute their products individually, and "attached artisans," who work for patrons, typically producing luxury goods for elites (Brumfiel 1987, Clark 1995). Two other concepts have been added to this scheme, both called "embedded specialization" (of course, the authors really mean "embedded production"). Ames (1995) uses this term to refer to production of luxury goods by elites themselves (Inomata 2001). Later, Janusek (1999) uses this same term to describe production organized by corporate groups. Other aspects of craft production include recruitment patterns and the social identities and roles of crafters, raw materials and technology, and the standardization of products (Costin 2001b, Costin & Wright 1998, Sinopoli 2003).

High levels of craft intensity and scale tend to be found in highly commercialized economies and in state-controlled institutional settings in uncommercialized economies. Independent and attached producers are found in all states, but with varying contexts. The notion of specialization is difficult to discard; even authors critical of the notion cannot avoid using it (Costin 2001a, Stein 2001). But archaeologists should note that economic historians working on preindustrial craft production carry out rich and detailed analyses without having to use the term specialization in their research (Braudel 1982, Thirsk 1961). Specialization is more usefully limited to a high-level concept describing the division of labor in society, not the organization of craft production.

Trade and Exchange

In the 1980s a curious thing happened to the archaeological study of trade in ancient states. After a period of enormous empirical and conceptual productivity, archaeologists lost interest and moved away from trade studies; this action was part of the overall retreat from economic analysis mentioned above. The previous decade saw

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fundamental advances in the study of transport systems (Drennan 1984, Greene 1986, pp. 17–43), quantitative artifact distributions (Hodder 1974), and methods to distinguish various types of exchange with artifactual data (Renfrew 1975). A whole suite of techniques for chemical and petrographic artifact sourcing achieved new levels of accuracy and availability. The discipline seemed poised to make major conceptual and empirical advances when interest in these topics suddenly waned. Archaeometry continued to move ahead (Brothwell & Pollard 2001), resulting in an explosion of new scientific data on the sources of artifacts. Unfortunately, archaeologists still do not have the conceptual tools to make sense of the new data. Many recent advances in trade research—such as studies of Roman amphorae and Mesoamerican obsidian—owe more to the sheer accumulation of data than to any conceptual sophistication. The application of new economic models (e.g., Temin 2003) to rich archaeological datasets (Mediterranean shipwrecks in this case, e.g., Ballard et al. 2002, Pulak 1998) holds great promise.

For decades archaeologists have limited their analyses of exchange to Polanyi's simplistic triad of reciprocity, redistribution, and market exchange (Polanyi et al. 1957), a trend that continues unabated (Earle 2002b; Feinman & Nicholas 2004; Masson & Freidel 2002; Stanish 2003, pp. 20–21). Polanyi's classification has serious limitations, however: First, it fails to distinguish exchanges (two-way transactions) from transfers (one-way transactions; see Pryor 1977, pp. 26–31); second, it lumps forms of exchange (e.g., reciprocity) with exchange institutions (e.g., redistribution); and third, it suffers from Polanyi's commercial myopia discussed above. At the risk of sounding overly typological, I present several classifications that illustrate the range of variation that archaeologists should consider in analyzing ancient state exchange systems. I rework insights from several authors, particularly Pryor (1977), Sahlins (1972), Earle (1977), Temin (2001), Smith (1976a), Trigger (2003), and Braudel (1982). At least five relevant categories of transfers exist: allocation within the unit of production (Sahlins's generalized reciprocity); gift, without expectation of return (from the family level to international diplomacy); taxes (obligatory transfers from individuals to the state); tribute (wealth transfers between states); and theft and plunder. In several research traditions, including Mesoamerica and the chiefdom literature, taxes and tribute are lumped together under the label of tribute. Although these categories can be difficult to distinguish archaeologically, it is useful analytically to keep the concepts separate. Exchanges also exist in several alternatives: reciprocal exchange (Sahlins's balanced reciprocity, in which supply and demand forces are weak); market exchange (where supply and demand are important); and unequal exchange (rents, fees, sharecropping arrangements, and other market-type exchanges based on the threat of coercion).

Exchange within and between states is typically organized in a variety of institutional arrangements, of which the following are some of the major categories: reciprocal trade institutions (trade partners, "down-the-line" trade); periodic marketing systems (solar, dendritic, and interlocking forms); redistribution (both voluntary and involuntary forms, including leveling institutions, rationing, and feasting);

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state finance (discussed below); internal commercial institutions (merchants, money, credit, banking, accounting systems, etc.); and international exchange institutions (e.g., long-distance merchants, administered trade, ports of trade). I present these lists not as rigid typologies but as examples of the kinds of concepts needed to advance the comparative analysis of ancient state exchange systems. We need to move far beyond Polanyi's simplistic triad; noteworthy recent forays in the correct direction include Knapp & Cherry (1994), Earle (2001), and Stark (1990).

THE SCALE OF THE ECONOMY

Households

As the primary social unit of production, consumption, and reproduction in most agrarian societies, households occupy an important place in the study of ancient state economies. Archaeologists commonly acknowledge houses and their associated artifacts and features as among the best archaeological sources of economic and social data. The development of household archaeology as a distinctive method in the early 1980s included an explicit focus on domestic craft production (Wilk & Rathje 1982), a topic that remains an important area of archaeological research (Feinman & Nicholas 2000, Hendon 1996). By the late 1990s archaeologists working in domestic contexts were devoting more attention to patterns of consumption (Allison 1999), following broader trends in anthropology.

Archaeological research on domestic consumption now covers a variety of topics. The first task usually is to determine the probable uses of artifacts found in and around the house or house compound. Then archaeologists can address consumption-related topics like luxuries versus necessities, or gifts versus commodities (Sherratt & Sherratt 1991; Smith & Berdan 2003, Ch. 18). Feasting has become an important topic of analysis for ancient states (Bray 2003), along with studies of the consumption of alcohol and other special food and drink (Dietler 1990).

Some notable recent findings about ancient household economics concern the nature of variability at a number of scales. In some cases archaeologists have found a high level of variation among houses, often within the same community, in factors like wealth, access to imports, and economic activities (Cahill 2001, Hendon 1996). Several recent books on Latin American states address variation in the integration of past households into wider political and economic systems (Bermann 1994, D'Altroy & Hastorf 2001, Smith & Berdan 2003). Household-level data are crucial for the archaeological analysis of ancient economies, and this area is ripe for significant advances in the future.

Temple and Palace Institutions

In some ancient states, temples and/or palaces were major economic institutions that controlled considerable land and labor and processed large volumes of goods

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and services. Most of our information about temple institutions comes from written sources, but archaeology is starting to play a larger role in the study of these institutions. Mesopotamian temple economies, once erroneously believed to be coterminous with the entire economies of states, are particularly well documented in cuneiform sources (Van De Mieroop 1999, Zettler 1992); temples owned land and herds, controlled attached farmers and crafters producing textiles and other goods, and even leased land to private individuals. Some temples were located in large walled precincts. Excavations of examples like the Khafajah temple oval or the temple of Innana at Nippur reveal numerous rooms and courtyards outside the temple proper that may have had economic functions, but there is surprisingly little artifactual evidence of economic activities (Delougaz 1940, Zettler 1992). It is sobering to think that without the cuneiform texts we would have little idea that these and other temples were major economic institutions.

A similar situation—written records of major temple-based economic institutions with little archaeological evidence—holds in other ancient states like Egypt, Angkor, and the Inka. Temples without associated complexes of storage rooms and workshops were the norm in societies whose documentary records do not suggest major economic institutions centered on temples, from Greece and Rome to the Aztecs and Mayas.

Royal palaces in virtually all ancient states were the setting for numerous types of activity, from public assemblies to rituals, and most hosted a variety of economic activities focused on the king and royal family (Sheehy 1996). Of particular concern, however, are cases in which the palace was a major locus for craft production for export and a base for international exchange. Such palace economies are well known for the Bronze Age Minoan and Mycenaean societies (Hägg & Marinatos 1987, Voutsaki & Killen 2001) and several other Mediterranean cities like Ebla (Archi 1993) and Amathus in Crete (Aupert 1996). Excavations have uncovered numerous storage facilities and workshops in these palaces, and the interpretation of these data in conjunction with rich economic texts recovered from the palaces has generated sophisticated debates over the precise local and regional economic roles of the palaces. For the Bronze Age Aegean examples much of the palace-based economy was not described in palace archives, giving archaeology a crucial role in the reconstruction of these systems.

State Finance

Although ancient states used a wide variety of methods to finance their activities and enrich their rulers, most archaeologists limit themselves to a few simple models. Within anthropological archaeology the concepts of "staple finance" and "wealth finance" (D'Altroy & Earle 1985) are influential. In systems based on staple finance, rulers extract payments in food and utilitarian items from subjects and use the material to reward state personnel. Wealth finance, in contrast, is based on payments of wealth objects (high-value, low-bulk goods) that are more efficient for rewarding and controlling followers at greater distances. Although useful for the

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analysis of chiefdoms or uncommercialized states, these concepts are inadequate (by themselves) for understanding government finance in most ancient states.

Lindkvist (1991) suggests the useful concepts of external and internal exploitation. External exploitation, the acquisition of wealth from outside the local society or polity, includes pillage and plunder, taxes on mercantile activity by foreigners, imperial taxes on foreign provinces, and tribute. Forms of internal exploitation include various types of taxes and rent charged to local subjects. Studies of highly commercialized states with extensive historical documentation focus on variation in the type of taxes (labor versus goods versus money) and on the relationship between taxes and rent (Greene 1986, Hopkins 1983).

The sources cited above can be synthesized to identify a variety of forms of ancient state finance: plunder; staple finance; tribute in luxury goods (included in wealth finance; often phrased in ancient texts as gifts between rulers); taxation in goods or money (also a type of wealth finance); rental of state lands; commercial investment (state investment in production or exchange enterprises); and taxation in labor. The first six categories form an ordinal scale of increasing complexity, stability, and volume of transfers, and this scale is strongly associated with the degree of commercialization and the power of the state. Plunder and staple finance, for example, are most common in uncommercialized chiefdoms and weak states, whereas rental of state lands and commercial investment by the government are most common in highly commercialized economies. Taxation in labor (corvée, slavery, and other labor transfers) is a form of finance that typically supplements other mechanisms. The uncommercialized Inka imperial economy is unique in that taxation in labor was the only kind of state finance (Murra 1980).

Apart from some discussions of staple finance and wealth finance (D'Altroy 1992, D'Altroy & Hastorf 2001), there is little systematic research on the archaeological expressions of different forms of state finance. One active area is the use of archaeological data to evaluate documentary accounts of Roman imperial taxation (Greene 1986). For many economies, however, archaeologists cannot even distinguish trade from taxes, much less analyze the type of state finance system; clearly this topic needs greater conceptual sophistication and considerable methodological attention.

Cities and Regional Systems

The most fundamental component of urban economics in antiquity was the provision of food to cities (Smith 2003). Although specific archaeological evidence of the movement of food from rural to urban contexts is elusive, regional-scale reconstructions of demography and agricultural practices provide indirect evidence for urban food provision (Wilkinson 2003). Without documents, however, it is difficult to identify the specific mechanisms (rents, taxes, market exchange) of such provisioning. The large size of two of the earliest cities (Uruk and Teotihuacan), coupled with an unpopulated countryside, indicates that urban farmers must have walked out to their fields, perhaps staying in temporary field shelters (Adams

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1981, Cowgill 1997). Among the lowland Maya, in Africa, and perhaps in other areas with low-density cities, intensive farming took place within the urban zone (Isendahl 2002), although the output of such gardening was insufficient to meet urban food needs.

The provisioning of a city with food from its hinterland establishes a regional economic system (in the sense of Smith 1976b), and few cities can be understood economically outside of their regional context (Cowgill 2004, this volume). Most archaeological studies of regional economies are based on survey data (Kowalewski 1990, Wilkinson 2003), and thus their level of coverage of craft production and specific exchange mechanisms is limited. The use of residential excavations to provide more-detailed data on regional exchange and rural-urban interaction is starting to make contributions in many regions (Bermann 1997, Schwartz & Falconer 1994).

Max Weber's (1958) concept of the "consumer city" is one of the major components of the modernist/primitivist debate. Finley and other primitivists promoted Weber's model of ancient cities that had low levels of production and exchange and were drains on society's resources. Recent scholarship indicates levels of urban-based production and commercial exchange in Roman cities higher than Finley described, and archaeology has played a major role in refuting the consumer city model (Mattingly & Salmon 2001, Parkins 1997). For Greek cities, Morris (n.d.) still finds the consumer city model useful.

International Economies

The economics of empires, world systems, merchant diasporas, and other international phenomena have received considerable recent attention from archaeologists, and there are many excellent recent review articles and edited volumes with extensive citations to the literature. From a materialist perspective, economic gain is the primary motive for imperial expansion. Archaeologists have focused on forms of imperial control (direct versus indirect), imperial involvement in agricultural and craft production, the relationship between merchants and the state, and economic transformations at the household level effected by imperial conquest (Alcock et al. 2001, D'Altroy & Hastorf 2001, Greene 1986, Sinopoli 2003, Wells 1999). Variation in imperial economies, both within and among ancient empires, is a major focus of this research.

Several archaeologists working on ancient states employ an amorphous world-systems approach that uses concepts modified from Wallerstein's world systems theory to analyze ancient multistate economies (Algaze 1993, Peregrine & Feinman 1996, Smith & Berdan 2003). Concepts such as cores and peripheries, long-distance commercial exchange, and elite networks are useful to model international systems where cross-polity trade had major social, political, and economic impacts. The phrase world systems has been polarizing within archaeology, however; some scholars exhibit strong negative reactions to any use of the concept. In several strongly worded critiques, for example, Stein (1999, 2002) attacks

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archaeological world systems research. Unfortunately he chooses to attack Wallerstein's model—rarely used by archaeologists—and not the actual research by archaeologists who work within the various world systems approaches.

Other international models receiving attention include merchant diasporas, prestige-goods systems, and ports of trade. Stein (1999, 2002) focuses archaeological attention on merchant diasporas (Curtin 1984), developing useful archaeological methods for their identification and analysis. Although he presents this notion as an alternative to world systems theory, it actually fits quite nicely into the collection of concepts that compose the world systems perspective. Another international exchange model employed by archaeologists is the prestige-goods exchange system in which elites derive power from their control over the production, exchange, and consumption of luxury goods (Friedman & Rowlands 1978, Junker 1999). This model, sometimes confused with the universal practice of luxury goods exchange among elites, best fits chiefdoms and perhaps partially commercialized weak states. It is incompatible with high levels of commercialization because commercial exchange erodes elite control of the production, exchange, and consumption of luxury goods.

Several ancient polities with internally uncommercialized economies engaged in commercial-type exchange with other polities (external commercial exchange). Polanyi (1963) developed his influential port-of-trade model to account for such cases. Ports of trade were insulated centers located on international borders or coasts where merchants working for various states could gather to exchange goods in a setting of protected neutrality. In Polanyi's model, exchange in ports of trade was politically dominated—not entrepreneurial—and it was carried out in isolation from local exchange systems. Unfortunately, Polanyi's rabid anticommercial views led him and his colleagues to overstate the occurrence and importance of ports of trade (Polanyi et al. 1957), perhaps because the concept allowed Polanyi to explain away evidence for entrepreneurial behavior of professional merchants. Empirical and conceptual advances led to a series of critiques and refutations of the model (Figueira 1984; Knapp & Cherry 1994, pp. 134–42; Pearson 1991, pp. 73–74; Smith & Berdan 2003, Ch. 17), resulting in the reclassification of former "ports of trade" as emporia, trading centers, and other kinds of settlements where commerce took place without the political domination posited by Polanyi. Nevertheless, recent research indicates that some Polanyi-esque ports of trade did exist in the ancient world; the Iron Age port of Naukratis in the Nile Delta probably is the best example (Möller 2000).

TOPICS IN POLITICAL ECONOMY

The Identification of Commercial Exchange

Identification of commercial institutions and practices at the high end of the scale—credit, banking, bills of exchange, merchant partnerships, etc.—requires written records. But other institutions and practices associated with internal

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commercialization leave material traces that can be studied archaeologically. Coins are the most obvious artifact category here (Greene 1986), but noncoinage money is also important (see discussion below). The physical infrastructure of commercial exchange—marketplaces, warehouses, and port facilities—also may be recoverable archaeologically (Leong 1990), and the presence of shops in urban neighborhoods (Cahill 2001, pp. 112–13) also suggests commercial activity.

Study of the effects of exchange systems on the contexts and spatial distributions of artifacts is a promising approach to the documentation of commercial exchange. Hirth (1998), for example, proposed that administered exchange results in a stronger association between high-value goods and elite contexts than does commercial exchange. The widespread presence of valuable goods in nonelite domestic contexts—typically in lower frequencies than in elite contexts—thus suggests the operation of commercial exchange. Although this sounds plausible, household distribution patterns matching Hirth's predictions for market economies are reported for both the commercialized Aztec economy (Smith 1999) and the uncommercialized Inka economy (D'Altroy & Hastorf 2001, Ch. 10, 11). Additional comparative research is needed to evaluate Hirth's model and its implications. At the regional level, some artifact distribution patterns, such as widespread regional uniformity of imported goods, suggest the operation of market systems (Braswell & Glascock 2002, Nichols et al. 2002). These approaches are important in regions like Mesoamerica where most forms of money were perishable (see below) and evidence of commercial infrastructure is difficult to identify archaeologically.

External commercial exchange in the Mediterranean area has received considerable archaeological attention. Hafford (2001, p. 258), for example, proposes a suite of material correlates of international merchant activity in the Bronze Age—including weights and balances, cylinder seals, scrap metal, and abundant trade goods—and there has been considerable fieldwork on harbors and port facilities (Swiny et al. 1997). Unfortunately, one of the most promising lines of evidence (weights and measures) has contributed little to our understanding of international economic processes. Scholars have been so preoccupied with quantitative metrology (Pare 2000) that they have failed to explore the economic implications of their data beyond some simple inferences (Hafford 2001).

Money

Money can be defined as objects that serve as both a medium of exchange and a unit of account (Grierson 1977, Wray 1998). Within economics there are two fundamental, opposing views of money: the orthodox, neo-Classical metallist view and the minority chartalist approach. These views have ramifications for the analysis of modern capitalist economies; for present purposes I limit consideration to their quite different accounts of the origins of money. Metallists hold that "money enters the picture only in the modest role of a technical device that has been adopted in order to facilitate transactions" (Schumpeter 1954, p. 277). They emphasize the function of money as a medium of exchange and argue that it developed initially

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within barter economies to facilitate personal purchases because it lowered transaction costs (i.e., it was more efficient than barter). Once a medium of exchange came into general use, it took on the function of a unit of account (Samuelson 1973, pp. 274–76).

The chartalists give the state a much larger role in the analysis of money and emphasize the function of money as a unit of account. For them, money originated with the rulers of states. States started to keep track of finances using a standard unit. In some cases this unit of account developed into a medium of exchange when rulers demanded tax payments in the particular item (Wray 1998). This led to more widespread use of the item as money (subjects had to exchange goods or services to acquire the item to pay their taxes), contributing to the commercialization of the economy. In other cases early units of account did not develop into media of exchange; examples include oxen in Homeric Greece (Grierson 1977), the *deben* in Pharaonic Egypt (Henry 2004), and perhaps some unit tracked on Inkan *khipus* (Urton 2003). These uncommercialized economies needed accounting standards (because of the extensive bureaucratization of their state-run economies), but they did not need, or did not develop, media of exchange.

The findings of economic anthropology support the chartalist view because barter economies (required in the metallist account) probably never existed (Dalton 1982). The chartalist account fits the origins of coinage quite well; the earliest coins (from Lydia, sixth century BC) were of large denominations and were issued by states to pay public debts (Hudson 2004). Money long predates coinage, however. The earliest money (in Mesopotamia) consisted of irregular pieces of silver (referred to by the German term *hacksilber*), and its origins are far less clear (Balmuth 2001). In other regions with indigenous money—such as Mesoamerica, where cacao beans and cotton textiles served as money—there is little archaeological evidence for the origins of money. Archaeologists have made important contributions to the study of early coinage, but they have been less successful in documenting or analyzing other types of ancient money. Neither have economic anthropologists contributed much to this topic, probably because most of their work on money consists of either ethnographic descriptions of primitive valuables (media of exchange that do not serve as units of account) or else studies of the impact of capitalist money on non-Western economies. Most economic anthropologists have ignored units of account and archaeological data on early money.

Property, Labor, and Other Difficult Topics

Property and labor, as major economic relations, are fundamentally important in any state economy. But because they largely consist of jural relations, they are extremely difficult to analyze with archaeological data. Studies of property systems in ancient states rely almost exclusively on textual data (Haring & de Maijer 1998, Hudson & Levine 1999). Property is the subject of several recent methodological papers by archaeologists (Earle 2000, Gilman 1998), but these writings serve mainly to confirm that the ability of archaeologists to reconstruct property

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relations or systems of property is quite limited without written information. The archaeology of labor organization is similar to property relations. Documentary data provide good information on some ancient state labor systems (Powell 1987), and archaeologists have made comparative and conceptual advances (Dietler & Herbich 2001); but the use of archaeological data to analyze labor organization is quite difficult.

Fortunately, the cumulative effects of labor, however organized, do leave clear material remains. This topic has been pursued, particularly in the New World, under the rubric of energetics. Archaeologists have reconstructed the labor and material inputs for stone architecture (Abrams 1994) and the production of ceramics and other crafts (Feinman et al. 1981). Theoretical treatments have addressed the implications of energetics data for political power (Trigger 1990) and urbanization (Sanders & Santley 1983).

Labor input provides the best archaeological approach to the calculation of economic value, both for its theoretical pedigree (Marx 1967) and for the feasibility of energetic reconstructions. The alternative approach to value in modern economics—on the basis of scarcity—is difficult to apply archaeologically because of the interference of formation processes and sampling problems (Smith 1987). As a complement to analyses of economic value and wealth, archaeologists also have considered social or cultural value and their relationship to status and prestige (Bailey 1998). Unfortunately, research on energetics declined in the 1990s, another victim of the retreat from economic analysis at that time.

Economic Change

Much theorizing about change by economists, including North (1981, 1991) and other new institutional economists, is naive and inapplicable to many ancient states because a high level of commercialization is simply assumed (Ankarloo 2002, Jones 1993). Even when discussing ancient commercial economies, economists need to do more than just suggest that particular practices were adopted because they lowered transaction costs (North 1981, Silver 1995). In contrast, much theorizing by anthropological archaeologists, based on the literature of cultural evolution and the substantivist economic anthropology of Polanyi, errs in the opposite direction by denying or downplaying commercial institutions and practices in ancient states (Brumfiel & Earle 1987b, Manzanilla 1997). Useful theories of change must be able to handle ancient economies at all levels of commercialization without the blinders of either the promarket mentality or the antimarket mentality.

Agricultural intensification is a type of economic change that has seen considerable archaeological research and debate (see above). Archaeologists have drawn inspiration (both positive and negative) from the intensification literature (Netting 1993), and the study of agricultural features and methods is an active and productive line of empirical archaeological research on economic change (Johnston 2003, Morrison 1996). An important variable in the literature on agricultural intensification is the ratio of labor to land in a given area. Rough estimates of these parameters

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are relatively easy to obtain from regional survey data, and a body of comparative and theoretical research discusses the importance of land/labor ratios for processes of economic change (Allen 1997, North 1981). Conditions of abundant land but limited labor tend to generate population growth, colonization of new zones, urbanization, the growth of trade, and economic prosperity. Sustained growth of this sort often transforms the economy into one of abundant labor but limited land, which leads to intensification, greater exploitation of labor, contraction of exchange, and declining standards of living (Smith & Heath-Smith 1994).

The relationship between state power and commercial level is generally inverse (Blanton et al. 1993, Hansen 2000, Trigger 2003, pp. 342–55). Archaeologists apply this generalization dynamically in cases where powerful states with low levels of commercialization give rise over time to smaller states with more commercialized economies. This change has been marked in several cases by the spatial expansion of the economy into an international system, a growing regional economic diversification, and the conversion of former luxury goods into commodities (Blanton et al. 1993, pp. 212–19, Hudson & Levine 1996, Sherratt & Sherratt 1991, Smith & Berdan 2003). In an important series of collections, Hudson and colleagues (in the International Scholars Conference on Ancient Near Eastern Economies) show that commercial institutions and practices in the Near East developed initially within the context of temple and palace institutions and only later took on an independent existence outside the state and other institutions (Hudson & Levine 1996, Hudson & Van de Mieroop 2002). The chartalist view that money originated with states fits well with this notion.

Archaeological research ties into several broader areas of social scientific and historical scholarship on economic change in precapitalist states, including world systems, complexity theory, long-term change, and preindustrial economic growth. Archaeological interaction with the wider world-systems community has a long history (see discussion above), and archaeological contributions are included in an important recent state-of-the-art assessment (Denemark et al. 2000). Complexity theory is starting to make inroads into archaeology. The formal modeling associated with the Santa Fe Institute holds great promise, but most applications focus on egalitarian groups, not states (Bowles & Choi 2003, Kohler & Gumerman 2000). Informal systems approaches so far have been more useful than formal modeling for ancient state economies (Algaze 2001, Jacobs 2000).

Some work in the emerging field of long-term change studies includes serious engagement with archaeology (Dark 1998, Denemark et al. 2000). Also noteworthy is a trend in the analysis of comparative preindustrial economic growth that moves the field far beyond earlier capitalist-centered and Western-centered biases (de Vries 2001, Goldstone 2002). Goldstone and other scholars explore several types of economic growth and work to document and analyze specific episodes of growth throughout history and even prehistory. Morris (2004) is now applying this approach to archaeological data, using architectural, artifactual, and osteological evidence for changing standards of living in Archaic and Classical Greece; this is a promising avenue for continuing research.

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FUTURE DIRECTIONS

Archaeologists have made numerous contributions to scholarly understanding of ancient state economies, both those that are documented in textual sources and those lacking documentary data. The literature reviewed above suggests several topics that need increased attention (beyond basic fieldwork and analytical research directed at economic topics). First, we need better material culture models of economic practices and institutions. What do processes like commercial exchange, attached production, temple economies, or economic growth look like in the archaeological record? Second, we need to move beyond the "Same/Other" debate to produce more sophisticated conceptual and theoretical frameworks. Third, we need far more comparative research on ancient state economies. This research should include targeted comparisons of limited domains (e.g., agricultural terracing, gift exchange, or feasting), broader comparisons of whole economies and societies (Trigger 2003), and controlled theory-based economic comparisons like those of Angresano (1996).

Work with economic historians should be a high priority. Unfortunately most economic historians avoid ancient states and archaeology, as shown by the dearth of relevant entries in the recent five-volume *Oxford Encyclopedia of Economic History* (Mokyr 2003). Archaeologists need to interact more closely with those economic historians who do study ancient states. Hudson's collaborative project on ancient Near Eastern economies (Hudson & Levine 1996, 1999; Hudson & Van De Mieroop 2002) has been important and productive, yet these volumes include only three contributions by archaeologists. There is a pervasive bias toward documentary sources, leading historians to ignore archaeology and archaeologists themselves to attribute too much importance to the documentary record (see discussion in Moreland 2001). This bias is particularly pernicious and ironic for economic analysis because archaeology surpasses the documentary record in the quality and quantity of numerous types of economic data for many periods. The topic would also benefit from increased interaction between archaeologists and economists, particularly political economists and economic anthropologists. Finally, archaeologists need to rise above the isolating tendencies of existing regional and disciplinary traditions to enlarge the comparative scope of their analyses of ancient states and their economies.

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